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Reduce Extended Length of Stay by Reducing In-Hospital Falls

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Abstract

**Problem:** Every year, there are many in-hospital falls (IHF). Nationally there are between 700,000 to 1 million falls recorded each year. Hospital falls financially burden our healthcare industry, costing approximately 34 billion annually. **Context:** In a local hospital in Northern California, Marin County, the microsystem has had an extraordinary number of in-hospital falls (IHF). To date (June 2023), 13 falls have been recorded thus far; the microsystem is on track to beat the previous year's record number of 21 falls in a calendar year.

**Interventions:** The MSN–CNL student proposed re-educating staff, resetting expectations, and reestablishing workflow. We also sought to include leadership in rounding. Moreover, a focus on patient education was pivotal to the quality improvement project's (QIP) success. **Outcome Measures:** The MSN-CNL student established a goal of a 50% reduction in IHFs by the end of the calendar year for 2023, from 21 falls to 10.5 falls; this translates to 0.875 falls/month. The MSN-CNL student projected a measure of 4.38 falls within the Master's program target time of 5 months (January to end of May). A reduction in falls would result in several positive outcomes; for the microsystem, a net saving in cost-avoidance; increased morale for nursing staff; and regain the lost trust of the patients, family, and community regarding overall safety. However, during the Master's program period, ten falls had already occurred by the end of April. The MSN-CNL student had to reset goals. A new goal of a 20% reduction in falls or 16.8 falls for 2023 was established (1.4 falls/month). **Results:** To date, there have been 13 recorded IHFs in 5 months (Jan.-May); this equates to an average of 2.6 falls/month during the development of the QIP. As a result, we did not meet our initial target or our new goal of 7 falls (1.4 falls/month) in the five months (Jan-May). After QIP implementation, at the beginning of June, we recorded a slight but measurable decrease in the average of IHFs from 2.6 falls/month to 2.0 falls by the end of June. **Conclusion:** After reestablishing expectations, completing the re-education of nursing
staff, establishing leadership rounds, and including education of patients and their families in workflow, there has been a measurable reduction in the number of in-hospital falls.
Reduce Extended Length of Stay by Reducing In-Hospital Falls

Unfortunately, our facility has been experiencing high rates of falls. This topic is essential because of the devastating impact of falls on patients, families, staff, and the healthcare system. Falls are detrimental to patients' health outcomes and thus should be a priority area to improve. As a nurse, patient safety is of utmost importance, along with integrity, treating patients with dignity, altruism, and justice for our patients. For these reasons and more, therefore, the topic of reducing fall rates is an important one. The quality improvement project will succeed if we can improve by reducing one or two falls. We are University of San Francisco School of Nursing and Healthcare Professions student. We have completed the capstone quality improvement project for the MSN-CNL program. Our vision is to develop our leadership and managerial skills further. To utilize said skills to improve healthcare through transformational leadership and quality improvement projects. As an Assistant Nurse Manager (ANM), I see many nursing and MD workflow inefficiencies. We also see many inefficiencies in patient movement as they progress to the continuum of the healthcare system. As previously stated, patient falls are critical areas for improvement in the microsystem.

Problem Description

Nationally, there are a startling number of in-hospital falls (IHFs) yearly. According to MarketScale, an online business publishing website, there are between 700,000 and 1 million hospital falls yearly (MarketScale, 2020). In 2013, IHFs had a total cost of $34 billion to the US healthcare system (MarketScale, 2020). Baker et al. (2021) state that the National Database of Nursing Quality Indicators (NDNQI) reports a fall rate of 4 per 1,000 patient days in medical units (Baker et al., 2021). Fortunately, most falls are non-injury falls. However, serious injuries can include bruising, sprains, lacerations, fractures, or concussions. Serious fall injuries account for 6% to 10% of IHFs (Hook et al., 2008). The estimated average cost for each non-injury fall is
$1,586. A fall with a minor injury can cost $9,996, and a severe injury fall costs an average of $24,249 (Baker et al., 2021)—the average cost of an IHF to $14,000. Fall costs are associated with more diagnostics, treatments, and extended length of stay (ELOS). The national average for ELOS is six patient days (MarketScale, 2020). Furthermore, IHFs are listed as "never events" by the Centers for Medicare & Medicaid Services (CMS). Because falls are preventable, CMS does not reimburse for the added costs due to falls (CMS, 2006). Unfortunately, in-hospital falls will increase due to the aging population. The increase in falls will increase the financial burden on healthcare systems.

Falls are defined by the National Database of Nursing Quality Indicators (NDNQI) as an unplanned descent to the floor with or without injury (NDNQI, 2020). It includes a patient "landing" on a surface you would not expect to find a patient lying or leaning on. It also includes all unassisted and assisted falls, regardless of the cause: physiological (syncope) or environmental reason (slippery floor) (NDNQI, 2020).

Locally, our microsystem is part of a 107-bed hospital located in Marin County, Northern California. Marin County’s median age is 47.1 years, significantly older than the surrounding eight counties, with an average median age of 38 (Marin County, 2023). Marin's aging population increases their risk for falls, especially inpatients. This trend will only worsen with the baby boomer population (>57yrs of age) continuing to grow.

Our facility has had higher fall rates than the national benchmark of four per 1000 patient days. For the 2022 calendar year, there were a total of 50 IHFs. One fall happened in the Intensive Care Unit (ICU) and another in the cardiac-telemetry unit. Most IHFs have occurred on Med/Surg units, with 48 falls. For metrics that matter, there were 27 recorded falls on the Med/Surg unit and 21 on the Med-Tele unit. The microsystem in review is a 31-bed med-tele unit, in which last year there were 21 falls recorded; refer to Appendix A for details. This year,
there have already been 13 recorded falls between January and May (in 5 months), resulting in ELOS. An average of 2.6 falls per month. At this rate, the microsystem is on track to break the previous year’s record of 21 falls and set a record of 31.2 IHFs for 2023. The increase of 10.2 from the previous year's count is almost a 150% increase in falls from the previous year. The nation’s average ELOS is six patient days; in our microsystem, the measured ELOS post-fall is slightly better, with an average of 4.43 patient days. The 4.43 patient-day is because most IHFs in our microsystem are non-injury falls.

To reduce the number of occurrences of falls, the MSN-CNL student has reviewed articles on fall reduction and combined methodologies to augment current strategies to achieve lower fall rates without a significant increase in cost. We initiated the quality improvement project (QIP) to reduce IHFs by at least 50%. However, by April, the unit had reached the 50% benchmark of 10.5 falls for the calendar year of 2023.

Available Knowledge

The MSN-CNL student formulated the PICOT question to guide the quality improvement project and search for evidence. With patients in an acute hospital setting (P), are standardized fall prevention protocols (I) compared to no standardized fall prevention protocols (C) effective in reducing fall rates (O) within 1000 patient days (T)? A literature review to establish Evidence-based practice using CINAHL, Cochrane Library, and PubMed databases. The search terms are falls, inpatient falls, fall preventions, fall risk assessment tool (FRAT), nursing sensitive indicators (NSIs), in-hospital falls, and preventing falls. The articles were rated for the quality of the evidence using the John Hopkins Nursing Evidence-Based Practice (JHNEBP) evaluation tool. For the formulation of the PICOT question, review, and rating of evidence, please refer to Appendix B.
Ojo & Thiamwong (2022) performed a qualitative systematic review titled “Effects of nurse-led fall prevention programs for older adults.” The authors provided EBP that Nurse-led programs are highly effective in reducing falls, particularly those with an education component for older adults (Ojo & Thiamwong, 2022). This article helps develop and reinforce fall prevention strategies already in use—the JHNEBP evaluation tool rates this article as level IIB.

Johnson, Stinson, and Razo (2020) performed a qualitative study with mixed methods, a second phase pilot study to identify patient fall risk and prevention strategies. The authors tested Three fall risk and prevention data collection instruments. The results from the validated instruments were combined to formulate a fall prevention bundle and a fall prevention network team. The study identified factors that prevent nursing staff from participating in fall prevention programs (Johnson et al., 2020). This article will help guide our QI project to help recruit and promote nursing staff to buy into the fall prevention program—the JHNEBP evaluation tool rates this article as level II.

Dykes et al. (2020) performed a nonrandomized controlled trial using a wedge design. They evaluated a patient-centered fall-prevention tool kit to reduce falls. The authors found that the fall prevention intervention plans that engage patients effectively reduce falls. This study showed a 15% reduction in falls with patients who are \( \leq 65 \)y.o. and a 10% reduction in falls with patients who are \( \geq 65 \)y.o. The 3-step fall prevention process resulted in building a partnership between the patient and care team and strengthening the Fall TIPS tool kit. This information will help develop a partnership between nursing staff and patients for the QI fall prevention project. The JHNEBP evaluation tool rates this article as a level IIA.

Morris et al. (2022) performed a systematic review and meta-analysis study to identify interventions to reduce falls. The analysis demonstrated that education was the most effective strategy for fall reductions. Education of the staff, patients, and family produced the highest
results. Furthermore, low bed, bed/chair alarms, and Fall Risk Assessment Tools (FRATs) did not affect reducing falls. This data is significant because MSN-CNL student’s QIP focuses on re-educating staff on fall prevention strategies and getting nursing staff to buy into the new workflow, which is heavy on education—the JHNEBP evaluation tool rates this article as level IIB.

In an earlier study by Dykes et al. (2010), they performed a cluster randomized study to determine and develop a fall prevention tool kit. The authors developed the Fall Prevention Tool Kit (FPTK) and determined that FPTK effectively reduced the number of falls. Of the FPTK interventions, communication was the most effective in reducing falls. Communication between staff, patients, and family was a key factor. The utilization of communication boards was the primary tool used. The education of staff was another critical factor in reducing fall rates. Using the established FPTK and current fall prevention interventions in our microsystem will augment our strategies to reduce IHFs. The JHNEBP evaluation tool rates this article as a level IIA.

The EBP reviewed has demonstrated that the most effective way to reduce falls is by everyone buying in, creating a fall prevention network that uses all its tools and interventions at its disposal. A recurrent but understated theme is that there is no silver bullet to reduce falls. It takes multiple interventions, strategies, education, and proper use of Fall Risk Assessment Tools (FRATs) involving leadership, patients, and families.

**Rationale**

**Conceptual Framework**

Change of practice and culture was vital for the quality improvement project to be successful. To promote change within the microsystem, the MSN-CNL student will utilize Kotter’s Eight Steps of Change (Appendix C). In the initial stages, meeting with leadership plays a critical role in establishing goals for the project and for support. The first three steps of Kotter’s
change model are listed. 1.) Create urgency. As stated previously, our microsystem is greatly affected by the high rate of falls that affect our microsystem in multiple ways, such as low staff morale and budgetary impact. Most importantly, the safety of our patients. 2.) Build a coalition. Everyone must be involved, from leaders to nurses, PCTs, and ancillary staff. Family and patients should be included in fall prevention strategies as well. 3.) Strategic Vision. The vision is to reduce the high rate of IHFs by having everyone involved as part of the collaborative interdisciplinary team. The following steps in Kotter’s change model are about mobilizing staff. 4.) Mobilizing volunteer army (leaders, frontline staff, and patients). Everyone on the team needs to agree that change is needed. Leadership must ensure that all staff are adequately trained in evidence-based practice using FPTKs. 5.) Remove barriers. Assessing the microsystem’s culture, the workflow of frontline staff, and the use of FRATs will all help identify gaps in care and barriers to change. 6.) Short-term wins. By generating realistic goals, the MSN-CNL student can build momentum in changing the culture to making falls and other nurse-sensitive indicators (NSIs) priorities. 7.) Sustain change. With meeting short-term goals/wins, sustaining change is more manageable. However, sustaining the change will be a work in progress. 8.) Institute change. Because sustaining change is difficult, keeping and reevaluating the changes until implemented and the behaviors and culture have changed is imperative.

**Specific Project Aim**

We aim to reduce patients' extended length of stay by reducing hospital fall rates. More specifically, the outcome the MSN-CNL student is expecting to achieve in the 31-bed med-tele unit is a reduction in falls by 20% from 21 IHFs to 16.8 by the end of 2023, the target goal during the Master's program period from Jan-May is a target of 7 falls (1.4 falls/month).

**Context**

**Microsystem Assessment**
The microsystem in review is a 31-bed med tele unit that cares for an aging population from Marin County. The staff mix for the unit is nursing managers (UMs), ANMs, physicians, nurses (core staff and travelers), PCTs, social workers, case managers, and physical, occupational, and speech therapists. As previously mentioned, many of Marin County's residents are aging and have comorbidities that make them a high fall risk. Examples of comorbidities that increase fall risks are dementia, previous orthopedic injuries, a decline in sensory inputs (i.e., visual and hearing loss), insomnia, delirium, balancing problems, and heart conditions (bradycardic or tachycardic arrhythmias), to name a few.

Another factor that affects fall rates is the unit's layout, which are many blind spots where patients are not in the line of sight. Additionally, doors to the rooms do not have windows, inhibiting patient visualization. Another contributing factor is the staff mix; there are many times when there needs to be more staff on the unit per Hours Per Patient Day (HPPD) staffing needs. Either nursing is short-staffed, or PCTs are not available due to sitter usage or not scheduled. When units are short-staffed and do not have the right skill mix, they have been demonstrated to increase the number of falls (Kim et al., 2019). All these factors contribute in one way or another to the increased fall rates.

**SWOT Analysis**

To implement the training and modify current methodologies for reducing falls, the MSN-CNL student performed a SWOT analysis to determine what factors will influence the implementation of the new methodologies, refer to Appendix D. Several factors would affect the outcomes. The SWOT analysis revealed that the strengths include strong teamwork and collaboration. Leaders make fall prevention a priority. Other strengths include the organization's values of EBP and the low cost of implementing QI projects because implementation consists of modifying current methodologies and re-education. For weaknesses, the SWOT analysis
revealed staff resistance to change, leadership needing to take ownership of limited resources for new methodologies, and other competing issues. For opportunities, several innovative technologies available in the market have proven promise (i.e., PUP socks). Other opportunities are if fall rates decrease, the facility would get public recognition for the safety standards (i.e., LEAP Frog group). Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores would also increase. However, the threat to the success of the QI projects is that there are no reductions in falls within the period established (by the end of 2023), resulting in reduced reimbursements from CMS and regulatory penalties applied (i.e., fines). The analysis identifies that staff and leadership involvement are fundamental areas for improvement. However, re-education of staff and retooling current fall prevention strategies will significantly improve fall reductions. The strategies involved are low cost with the potential for high rewards in cost reduction with no need for new expenditure on technology or new equipment.

**Return on Investment (ROI)**

As previously stated, the cost of increasing falls to our microsystem is enormous, and CMS does not currently reimburse the added cost. Our microsystem’s 21 IHFs, equates to $327,930.75 for 2022 in non-retrievable cost from ELOS. The average ELOS post-fall is 4.43 days for a non-injury fall. At $3,525.00 daily, this equates to $15,615.75/ occurrence. When IHFs are reduced by 20% (16.8 occurrences), the added cost of ELOS will be reduced to $262,344.60, with a total saving in cost avoidance of $65,586.15. The initial investment cost of $25,772.60; will net a saving of $39,813.55 for the first years; refer to Appendix E. The rewards of reducing IHF rates outweigh the risk.

The MSN-CNL student also performed a GAP analysis. With our GAP analysis, refer to Appendix F, the MSN-CNL student would determine early on if our implementations were trending in the right direction and were having a positive result by setting goals within the action
plans. Completing each action plan will keep the QIP on track. For instance, trending monthly fall reports provide early data to determine a reduction in falls from an average of 2.6/month. Any number less than 2.6/month is a positive outcome.

The MSN-CNL student presented the project charter (Appendix G) to all the stakeholders of the microsystem and compared our microsystem to the national metrics. We also pointed out gaps in care concerning FRATs usage, areas of improvement and fallouts with FPTK use (i.e., bed/chair alarm usage fall outs), the effectiveness of EBP, and finally, the ROI from costs savings in cost-avoidance, the QIP was approved. The stakeholders included the clinical nurse leader (CNL), nursing directors (ND), unit managers (UMs), assistant nurse managers (ANMs), staff nurses (RNs), patient care techs (PCTs), physicians, physical therapists (PTs), and former patients and their families.

**Interventions**

In order for the microsystem to reduce the IHF rates by 20%. The collaborative team will rely on EBP and the current traditional methods, thus augmenting our fall prevention strategies. The QIP will reset expectations by retraining staff using current equipment, door signage, armbands, and the Schmidt fall screen tool. The training also consists of setting room layout, use of non-slip socks, Active Hourly Rounding (AHR), setting up bed/ chair alarms, and performing safety checks. Additionally, lowering the bed, locking bed wheels, and the 5P's (pain, potty, positioning, pumps, and placement of items within reach). Call lights within reach and keep night lights on. All these strategies comprise the FPTK. Traditional fall prevention bundles like FPTK are used in many hospitals, including ours. However, research has shown that traditional methods are less effective; the missing piece is educating patients and families. For example, bed/chair alarms a false sense of security for staff. They also contribute to alarm fatigue with all the false alarms. Patients are also unhappy with bed alarms for the same reasons. A key factor is
that patients and families need to understand why the FPTK safety measures are implemented. Therefore, they resist implementing safety measures, creating a hostile relationship between patients/families and staff. It further exemplifies why education for patients and families is so important.

The quality improvement project was accomplished by resetting expectations and training/educating staff. Prior to QIP initiation, the MSN-CNL student asked staff to complete a survey to establish a baseline of knowledge of the microsystem’s fall prevention strategies, and protocols, refer to Appendix H. Additionally, staff was assessed on how they completed the Schmid Fall Assessment Tool during admission and on every shift, refer to Appendix I. The MSN-CNL student used the questionnaire and one-on-one conversations to reinforce the proper use of FRATs and FPTKs. The MSN-CNL student also aided staff in using the mobility protocol tool to help determine if patient ambulation was safe, refer to Appendix J. Once all training was completed, the fall prevention team disseminated a cheat sheet to reinforce the education, refer to Appendix K. The Fall prevention team also included links to the Agency for Healthcare Research and Quality (AHRQ) on the home page of the intranet for the facility. The AHRQ is an additional resource made available to staff because the AHRQ has lots of educational material on fall prevention for the team. Kotter's change model points out that sustained change is challenging. Getting staff to buy in was a critical piece. Holding the collaborative team accountable was also challenging but necessary; everyone was responsible: PCTs, nurses, leadership, ancillary staff, and even involving patients and their families.

All the stakeholders would need to be involved. According to Rohm et al., the degree of success will depend on the team to reduce falls; it will mainly depend on how involved leadership is in the quality improvement project. The more involved leadership is, the more likely it is for success (Rohm et al., 2020). Using an interprofessional approach increases
awareness of the risks of falls. Using the EBP approach has shown a decrease in IHF rates (Rohm et al., 2020). The current EBPs in place in our microsystem are the FPTKs. In addition to the current FPTKs, Rohm et al. found improvement areas proven to decrease IHF rates as EBP. The four improvement areas are the interprofessional approach, involvement of patients and families in post-fall huddles, increased awareness of patients' risk for falls, and involve patients and families in fall prevention strategies (Rohm et al., 2020). Utilizing the new methods in addition to traditional FPTKs will result in a decrease in IHF rates.

For our quality improvement project to be practical and achieve financial savings in cost avoidance, our project will need to have a minimum initial investment. The MSN-CNL student can achieve this by implementing EBPs that require a low initial investment but have high ROI (low risk, high reward). In Appendix E, the MSN-CNL student outlined the initial staff training and materials expenses, including replacing or repairing current devices. The initial cost for more training for nursing staff would be $8,892.00. We calculated $8,892.00 using this equation: $85.50/hour + 30% benefits x2 hours/nurse (x40 nurses). The amount for more PCT training is $1,380.60. We calculated $1,380.60 using this equation: $35.40/ hour +30% benefits x2 hours/PCT (x15 PCTs). At the training, snacks were provided for staff; the snacks budget was $500.00. The snacks were energy bars, pastries, fruits, finger foods, and drinks (coffee, water, or refreshments). An initial investment of $15,000.00 to replace/repair current devices that were not in service, such as bed alarms, chair alarms, call lights, front wheel walkers, computers with cameras (used to visualize patients in isolation rooms), and handouts. The EBP has demonstrated that retraining or re-educating staff effectively reduces IHF rates. By investing in re-education, the ROI is substantial in cost avoidance savings. The MSN-CNL student has calculated that an initial investment of $25,772.60 and $10,772.60 per year after that will result in net savings in
cost avoidance of $39,813.55 in the first year and a $54,813.55 after that, refer to Appendix E. These totals will significantly save our microsystem by reducing falls by 20%.

**Study of Interventions**

For the project's success, the MSN-CNL student used Kotter's Change Theory and PDSA cycle to assist in monitoring implementation and interventions and making the necessary changes or adaptations. During the implementation of the QIP, the MSN-CNL student used the Plan-Do-Study-Act (PDSA) cycle (IHI, 2023) in Appendix L to determine if practice changes lead to improvement. The PDSA cycle consists of four steps; step one is Plan: The MSN-CNL student completed re-education and retraining of staff on FRAT and FPTK methodologies utilized in our microsystem. The next step is DO: The MSN-CNL student guided staff in implementing the FRAT and FPTK strategies and educating patients and families. The following step is Study: During this phase, the MSN-CNL student and the fall prevention team analyzed, observed, and reviewed the implemented strategies to ensure proper FRAT assessments and proper utilization of FPTK strategies. The last step is Act: During this step, the MSN-CNL student and fall prevention team gathered data, analyzed it, and pointed out where gaps continue. The MSN-CNL student and fall prevention team decided that further PDSA cycles were needed, and adjustments to training and education were made as indicated.

**Measured Outcomes**

We aimed to reduce IHF by 20% from 21 (1.75/month) to 16.8 (1.4/month) occurrences yearly. If we achieve our target goal, we still have significant work to do, the national average of 4 (0.333/month) occurrences per year. Nevertheless, implementing the QIP has led the unit in the right direction. To ensure improvement. We can perform chart audits to determine if fall prevention strategies are being implemented. For example, review Schmidt scores and updates, fall prevention strategies, and active hourly rounding documentation (use of FPTK). When fall
rates reach less than 1.4/month (during the Master’s program period, Jan-May), we can infer that our new strategies are working to reduce falls and will meet our 20% reduction from 21 occurrences in 2022 to 16.8 falls for 2023.

Unfortunately, we have not met our target within the Mater’s program period (Jan-May). There have been some indications that change has begun to occur. Early indicators for June show two falls recorded. Two falls in a month is an improvement because, prior to the QIP implementation, the microsystem was experiencing an outrageous number of falls, averaging 2.6/month (13 falls in 5 months), which is almost three/month.

For the process measure, the MSN-CNL student set a goal to retrain 90% (33 of 37) of nursing staff for the QIP to be effective. We did not meet the goal of training 90% of nursing staff, however, 81% (30 of 37) of nursing staff were trained. The 81% of nursing staff who completed the training felt more confident in performing FPTK, FRAT, and in educating/explaining fall prevention strategies to patients and families.

Something to consider is balancing measures; the MSN-CNL student does not see any balancing measures or downside to reducing ELOS resulting from falls, except for the additional time in completing patient/family education. FRAT and FPTK should only take part of the time, as nursing staff are familiar with said strategies. Even so, we can only perceive benefits as mentioned above. By the end of the QI project, the expected outcomes will be increased trust between staff and patients, a safety culture will be established, reduced IHF rates, and reduced ELOS, resulting in cost savings for the microsystem and the healthcare organization.

**Ethical considerations**

IHF occurrences leave a substantial financial burden on healthcare systems that are not recoverable. Falls not only have a financial burden but also devastate patients and their families and nursing staff morale. The results of these incidents have long-lasting implications regarding
patients and family feeling safe in our facilities and, most importantly, the loss of trust in our abilities to keep them safe. Moreover, ELOS with poor patient outcomes result from IHF; for these reasons, reevaluating the microsystem’s fall prevention strategies is imperative. Augmenting current FPTK strategies with EBP will impact reducing IHF rates.

The American Nurses Association (ANA) states that nursing care is guided by four ethical principles of autonomy, beneficence, justice, and non-maleficence (Gaines, 2023). Keeping these ethical standards in mind, nurses must keep the patients safe. These ethical standards challenge nurses to balance autonomy with the patient's safety without infringing on the patient's autonomy. Another reason education of the patient and family is pivotal to the success of the quality improvement project. In addition to autonomy, nurses must consider other nursing ethical standards of beneficence, acting for the good and welfare of our patients. Justice is another ethical standard of nursing to consider in that we should care for all our patients with the same level of care. Lastly, non-maleficence, as nurses and health workers, we must not harm our patients. Keeping this in mind, it is a reminder of the Jesuit value of *cura personalis*, which means caring for the whole person (mind, body, and spirit) (Xavier, 2023). This Jesuit value drives the point of caring for each patient holistically, which is why education and communication with patients and including the family in the care plans are vital for the success of the quality improvement project to reduce falls.

Further ethical consideration, an Internal Review Board (IRB) approval for this quality improvement project is not required because this is not a research-based improvement project, but rather we aim to improve protocols that are already in place. The quality improvement project was approved by the faculty using QI review guidelines (Appendix M). The leadership in our microsystem also approved the QI project.

**Results**
As stated, during the developing phase of the QIP, our microsystem had 13 falls in five months (2.6 falls/month) during the Mater’s program period (Jan-May). By April, there were ten recorded falls (2.5 falls/month), then in May, there were three more recorded falls, which increased the rate to 2.6 falls/month. During the developing phase, 81% (30 of 37) of nursing staff and PCTs completed the training and education. 13% (4 of 37) of staff were on leave, and 6% (3 of 37) did not participate for other reasons. Of the 81% of staff, only 50% (15) were confident with FRATS scores. 75% (22) of staff felt confident setting up rooms and utilizing FPTKs. Moreover, 60% (18) felt confident completing safety education with patients and families. After re-educating on FRAT and retraining with FPTK, staff confidence increased to 90% (27) with FRAT and FPTK. Safety education confidence also increased to 90% (27).

Completing the QIP training resulted in an overall change in staffing confidence leading to changes in team morale and confidence that resulted in improvement post-QIP. For instance, two falls were recorded in June, bringing the average down to 2 falls/month. It is a slight decrease, but more importantly, it is the change occurring in our microsystem.

**Discussion**

The MSN-CNL student initiated the QIP intending to reduce IHFs by 50% from 21 occurrences the previous year to 10.5 occurrences for the year. However, early indicators demonstrated that the goal of 10.5 falls was quickly met, and a record number of falls was projected to be 31.2, with an average of 2.6 occurrences per month. The MSN-CNL student adjusted the goals and quickly acted with the fall prevention team. Implementation of augmented strategies went differently than planned; there had been many organizational, logistical, and environmental (construction) barriers. However, the MSN-CNL student had to readjust using the PDSA cycles and to organizational needs.
Early indicators post-full implementation of the QIP have demonstrated a small but measurable change in reducing fall rates from 2.6/month to 2.0 in June 2023. Although, we did not reach our goal for reducing fall rates by 20%, after analyzing the interventions and strategies, the fall prevention team and the MSN-CNL student acknowledge that further PDSA cycles would have been beneficial in further understanding barriers. For example, nursing staff compliance continued to be a challenge despite reinforcement. Other contributing factors that limited the success of the QIP were equipment shortage. For instance, bed/chair alarms, and door signage were not readily available. Additionally, when audits were performed, the FRAT was not updated consistently. These factors continue to plague the microsystem, and although there has been significant improvement a lot more work needs to be done. It is the MSN-CNL student’s belief that with further education and reinforcement of fall prevention strategies along continued leadership presence, the QIP will be successful.

**Conclusion**

Suggestions for other microsystems who are considering developing QIP to reduce falls. There is potential for other microsystems to improve their fall rates by augmenting the FRATs and FPTKs with the education of patients and families. However, a continued leadership presence along with active rounding and continued reinforcing of all strategies, specifically patient/family education will be needed for the success of the improvement project.

The QIP to reduce falls in our microsystem has shown a positive shift in reducing falls. The work of re-educating, retraining, resetting expectations among nursing staff, including leadership in rounding, and including patients and their families in strategizing safety plans has had an overall positive outcome. For instance, patients and families feel safe in our facility, and we have regained their trust. Nursing morale has also improved; the nursing staff has a collaborative spirit. Everyone is working together with a common goal. The fall prevention team
has set a standard of safety culture in our microsystem. For these reasons, the changes are sustainable. Although the changes are palpable, it will take significant work to keep the momentum going. Even so, nursing staff feel reassured and motivated now that they see results from their hard work. If we continue to utilize all the tools at our disposal, we will achieve the goal of reducing falls by 20%, down to 16.8 from 21 occurrences. It is the MSN-CNL student’s belief based on the early results that continued reinforcement of FPTKs, FRATs and patient education will continue to decrease IHF rates for our microsystem.
References


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Appendices

Appendix A

Inpatient falls per unit

Inpatient fall per weekday

Inpatient fall per shift
Appendix B

Evaluation Table

**PICOT Question:** With patients in an acute hospital setting (P), are bed alarms (I) compared to no bed alarms (C) effective in reducing fall rates (O) within 1000 patient days (T)?

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Sample</th>
<th>Outcome/Feasibility</th>
<th>Evidence Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ojo, E. O., &amp; Thiamwong, L. (2022). Effects of Nurse-Led Fall Prevention Programs for older adults: a systemic review. <em>Pacific Rim International Journal of Nursing Research, 26</em>(3), 417-431</td>
<td>Qualitative, Systemic review</td>
<td>197 articles were reviewed, and after the exclusionary process, only 11 articles were used.</td>
<td>Fall prevention programs that have educational components for patients are effective in decreasing fall rates. The results also indicated that nursing staff tend to improve nursing care and patient outcomes.</td>
<td>II B</td>
</tr>
<tr>
<td>Johnson, K., Stinson, K., Razo, S. (2020). Patient fall risk and prevention strategies among acute care hospitals. <em>Applied Nursing Research, 51</em>. No page. <a href="https://doi.org/10.1016/j.apnr.2019.151188">https://doi.org/10.1016/j.apnr.2019.151188</a></td>
<td>Qualitative: With mixed methods, the second phase of the pilot study</td>
<td>28-bed medical surgical unit at Scottsdale Thompson Peak Medical Center. The sample included patient, unit, and leadership-level data.</td>
<td>Three fall risk and prevention data collection instruments were tested. The results from the validated instruments were combined to formulate a fall prevention bundle. A fall network team was also formed.</td>
<td>III A</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
<td>Sample</td>
<td>Outcome/Feasibility</td>
<td>Evidence Rating</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Dykes, P. C., Burns, Z., Adelman, J., et al., (2020). Evaluation of a patient-centered fall-prevention tool kit to reduce falls and injuries: A nonrandomized controlled trial. <em>JAMA: Journal of American Medical Association: JAMA Network Open</em>, 3(11), e2025889. <a href="https://doi.org/10.1001/jamanetworkopen.2020.25889">https://doi.org/10.1001/jamanetworkopen.2020.25889</a></td>
<td>A nonrandomized controlled trial using wedge design.</td>
<td>Sample from 3 academic medical centers in Boston and New York cities. All were adults, 331 patients, both men and women.</td>
<td>Fall prevention intervention plans that engage patients are effective in reducing falls. In this study, there was a 15% reduction in falls with patients who are ( \leq 65 ) y.o. and a 10% reduction in falls with patients who are ( &gt;) 65 y.o. The 3-step fall prevention process resulted in building a partnership between the patient and care team and strengthening the Fall TIPS tool kit.</td>
<td>II A</td>
</tr>
<tr>
<td>Morris, M. E., Webster, K., Jones, C., et al. (2022). Interventions to reduce falls in hospitals: a systematic review and meta-analysis. <em>Age &amp; Ageing</em>, 51(5), 1–12. <a href="https://doi.org/10.1093/ageing/afac077">https://doi.org/10.1093/ageing/afac077</a></td>
<td>Systemic review and meta-analysis.</td>
<td>11,186 articles were identified, and after the exclusionary process, only 43 studies were included in the systemic review. Two additional studies were reviewed.</td>
<td>The analysis showed that education was the most effective strategy for fall reduction. Education of the staff, patients, and family produced the highest results. Moreover, low bed, bed/chair alarms, and Fall Risk Assessment Tools (FRATs) did not affect reducing falls.</td>
<td>II B</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
<td>Sample</td>
<td>Outcome/Feasibility</td>
<td>Evidence Rating</td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
<td>--------</td>
<td>---------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Dykes PC, Carroll DL, Hurley A, et al. (2010). Fall prevention in acute care hospitals: a randomized trial. <em>JAMA: Journal of the American Medical Association, 304</em>(17), 1912–1918. <a href="https://doi.org/10.1001/jama.2010.1567">https://doi.org/10.1001/jama.2010.1567</a></td>
<td>Cluster randomized study</td>
<td>In 4 urban hospitals, the study involved 10,264 patients and 48,250 patient days. Both males and females were sampled, and those ≤ 65 were excluded.</td>
<td>Fall Prevention Tool Kit (FPTK) effectively reduced the number of falls. Of the FPTK interventions, communication was the most effective in reducing falls. Communication between staff, patients, and family was a key factor. The utilization of communication boards was the primary tool used. The education of staff was another critical factor in reducing fall rates.</td>
<td>II A</td>
</tr>
</tbody>
</table>
Appendix C

Kotter’s 8-Step Model of Change

Step 1: Increase Urgency
Step 2: Build Guiding Team
Step 3: Develop the Vision
Step 4: Communicate for Buy-In
Step 5: Empower Action
Step 6: Create Short Term Wins
Step 7: Don’t Let Up
Step 8: Make Change Stick
Appendix D
SWOT Analysis

<table>
<thead>
<tr>
<th>Internal Factors</th>
<th>Strengths (+)</th>
<th>Weaknesses (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Strong teamwork and collaboration.</td>
<td>• Staff resistance to accepting change.</td>
</tr>
<tr>
<td></td>
<td>• Leadership to set the standards and make reducing falls a priority.</td>
<td>• Leadership needs to take ownership.</td>
</tr>
<tr>
<td></td>
<td>• Our organization values EBP.</td>
<td>• Limited resources for new modalities that are highly effective.</td>
</tr>
<tr>
<td></td>
<td>• Low cost in implementation. (Low risk, high reward).</td>
<td>• Redundancy of training.</td>
</tr>
<tr>
<td></td>
<td>• Implementations consist of modified current methodologies.</td>
<td>• Other competing safety issues take priority (i.e., HAPIs, CAUTIs).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>External Factors</th>
<th>Opportunities (+)</th>
<th>Threats (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• New technologies are available to assist staff in fall prevention (PUP sock).</td>
<td>• A fall reduction is not achieved within the time allocated.</td>
</tr>
<tr>
<td></td>
<td>• Public recognition for safety</td>
<td>• Reduced reimbursement</td>
</tr>
<tr>
<td></td>
<td>• Increased HCAHP scores</td>
<td>• Regulatory penalties</td>
</tr>
<tr>
<td></td>
<td>• LEAP Frog group recognition for safety</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix E

**Financial Cost Avoidance Analysis: Reducing inpatient falls.**

<table>
<thead>
<tr>
<th>Improvement Revenue (Cost Avoidance)</th>
<th>Cost/day</th>
<th>Average LOS days</th>
<th>Cost per hospital stay</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed cost/day (tele/med/surg)</td>
<td>$3,525.00</td>
<td>8</td>
<td>$28,200.00</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Increase LOS after fall ($3,525/day)</td>
<td>4.43</td>
<td></td>
<td>$15,615.75</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Cost of non-injury inpatient fall</td>
<td>$15,615.75/occurrence x21/yr</td>
<td></td>
<td>$327,930.75</td>
<td>$327,930.75</td>
<td>$327,930.75</td>
</tr>
<tr>
<td>Goal to reduce Occurrences by 20%</td>
<td>$262,344.60</td>
<td></td>
<td>$65,586.15</td>
<td>$65,586.15</td>
<td>$65,586.15</td>
</tr>
<tr>
<td>Average LOS + ELOS (average cost per fall)</td>
<td>12.43</td>
<td></td>
<td>$43,815.75</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

Total savings: $65,586.15 $65,586.15

<table>
<thead>
<tr>
<th>Improvement Costs</th>
<th>Cost per month</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly food budget (snacks, drinks, pastries)</td>
<td>$500.00</td>
<td>$500.00</td>
<td>$500.00</td>
</tr>
<tr>
<td>Additional training nurse (85.50/hr + 30% benefits x2hrs / nurse x40 nurses)</td>
<td>$8,892.00</td>
<td>$8,892.00</td>
<td>$8,892.00</td>
</tr>
<tr>
<td>Additional training (PCT average: $35.40/ hour +30% benefits x2hrs / PCT (x15 PCTs)</td>
<td>$1,380.60</td>
<td>$1,380.60</td>
<td>$1,380.60</td>
</tr>
<tr>
<td>Safety equipment (bed alarms, non-slip socks, improved lighting)</td>
<td>$15,000 (one-time investment)</td>
<td>$15,000.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

Total Cost: $25,772.60 (initial month) $25,772.60 $10,772.60

<table>
<thead>
<tr>
<th>Project Savings/Cost Avoidance (ROI)</th>
<th>Year 1 Annual Cost Savings</th>
<th>Year 2 Annual Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net savings = Cost avoidance - Improvement cost</td>
<td>$39,813.55</td>
<td>$54,813.55</td>
</tr>
</tbody>
</table>

Appendix F
## Gap Analysis

### Area Under Consideration:

Reducing Extended Length of Stay (ELOS) due to in-hospital falls (IHF)

<table>
<thead>
<tr>
<th>Desired State</th>
<th>Current State</th>
<th>Action Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Staff will perform active hourly rounding.</td>
<td>• Falls have increased, thereby extending LOS (ELOS) for an average of 4.43 Patient days.</td>
<td>• The CNL will develop a new training forum and modify current methodologies to decrease fall rates and ELOS.</td>
</tr>
</tbody>
</table>
| • The interprofessional team will be involved in fall prevention strategies | • Currently, it is nurse-driven.  
• Leadership and other professions are not involved.  
• PCTs are not part of the fall prevention team.  
• Other professionals are not involved either. | • After implementation, the interprofessional team will meet to evaluate current fall prevention strategies. Furthermore, analyze augmented methodologies. |
| • Patients and families will be included in fall prevention strategies | • Currently, patients or families are not included in fall prevention teams or in developing fall prevention strategies. | • Patients and families will be included in prevention strategies during admissions. Moreover, they will be invited to be part of the prevention team. |
Appendix G

Project Charter

**Project Charter:** Reducing the extended length of stay by reducing hospital falls.

**Global Aim:** Reduce patients' extended length of stay by reducing hospital fall rates.

**Specific Aim:**

The outcomes we expect to achieve in our 31-bed Med/Surg/Tele unit are a reduction in falls by 20%. Thereby reducing ELOS and associated costs.

**Background Information/Rational for the project:**

Hospital Fall (IHF) rates have increased, and as a result, so has the ELOS of patients, placing an increased financial burden on our microsystem. The national average for IHF rates is 4 per year in a med/surg/tele unit. In the last calendar year, our microsystem experienced 21 IHFs. It equates to 1.75 occurrences per month. The average Extended Length of Stay (ELOS) is 4.43 patient days for non-injury IHF. This increased financial burden is not retrievable and is a monetary loss to the microsystem.

We are seeking to reduce the IHF rates by 20%. It can be accomplished by using EBP with current traditional methods, thus augmenting our fall prevention strategies. It would include resetting expectations by retraining staff using current equipment and the Schmidt fall screen tool. The training will also consist of setting room layout, performing safety checks, and educating patients/families and including them in planning for fall prevention strategies.

Current fall prevention methods (FPTKs/FRATs) in place have been utilized traditionally. However, research has shown that these traditional methods could be more effective if augmented with education for patients. Simply relying on FPTKs/FRATs provides staff with a false sense of security; for instance, bed alarms add to alarm fatigue. And patients are not happy with bed alarms. Additionally, patients and families do not fully understand why these safety measures are in place. Therefore, they resist implementing safety measures, creating a hostile relationship between patients/families and staff. This is why patient/family education is a vital part of fall prevention strategies.

**Sponsors:**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Nursing Officer</td>
<td></td>
</tr>
<tr>
<td>Clinical Nurse Director</td>
<td></td>
</tr>
<tr>
<td>Quality Leader/Nurse</td>
<td></td>
</tr>
</tbody>
</table>

**Goals for the project:**

A reduction of IHF and ELOS will have several benefits for the unit.

1.) Reduce IHF and the possibility of patients having injuries.
2.) Reduce ELOS and associated costs.
3.) Create trust between staff, patients, and families.
4.) Create a culture for patient safety.
5.) Reducing IHF and associated ELOS will also reduce the financial burden from associated costs.
6.) Eliminate penalties/sanctions from regulatory bodies.

**Outcome Measure(s)**

We aim to reduce IHF by 20% from 21 (1.75/month) to 16.8 (1.4/month) occurrences per year. To achieve this goal, we would still need to place the unit under the national average of 4 (0.333/month) occurrences per year. However, it will lead the unit in the right direction.

**Process Measure(s)**

A goal for retraining 90% of nursing staff is expected for the QIP to be successful. The fall prevention team will perform chart audits to determine if fall prevention strategies are being followed. When we achieve fall rates of less than 1.4/month, we can infer that our new strategies are working to reduce falls.

**Balancing Measure(s)**

Additional time in educating patient and families. We do not see a downside to reducing ELOS resulting from falls. We can only perceive benefits as mentioned above.

**Team:**

<table>
<thead>
<tr>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN Co Led</td>
</tr>
<tr>
<td>CNS/Educator</td>
</tr>
<tr>
<td>Quality Nurse</td>
</tr>
<tr>
<td>Staff nurse champions</td>
</tr>
</tbody>
</table>
Appendix H

Fall prevention strategies List

Instructions: Please complete the survey to the best of your ability. Answer by checking off the boxes if you need education, need practice or feel comfortable completing interventions or protocols.

Completing Schmidt Fall Assessment Tool (admission, shift change, and any patient change).

☐ Need education
☐ Need practice
☐ Feel comfortable

Fall Prevention Tool Kit interventions (alarms, signage, armbands, Etc.)

☐ Need education
☐ Need practice
☐ Feel comfortable

Mobility Protocol (walker, cane, non-slip socks, Etc.)

☐ Need education
☐ Need practice
☐ Feel comfortable

Performing the 5 P’s (pain, potty, positioning, pumps, and placement of items within reach)

☐ Need education
☐ Need practice
☐ Feel comfortable

Setting up bed/chair alarms.

☐ Need education
☐ Need practice
☐ Feel comfortable

Transfer/safety equipment (Sara Steady, Sabina, Etc.)

☐ Need education
☐ Need practice
☐ Feel comfortable

Patient/Family communication with safety protocols.

☐ Need education
☐ Need practice
☐ Feel comfortable
Appendix I

Schmid Fall Risk Assessment Tool

**Schmid Fall Risk**

<table>
<thead>
<tr>
<th>Mobility</th>
<th>Mentation</th>
<th>Elimination</th>
<th>Prior History of Falls</th>
<th>Current Medications</th>
<th>Total Score</th>
</tr>
</thead>
</table>

**SCORING GUIDE**

<table>
<thead>
<tr>
<th>SCORE</th>
<th>MOBILITY</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>AMB W/NO GAIT DISTURBANCE</td>
<td>1 AMB W TRANSFERS W/ASSISTIVE DEVICES OR ASSISTANCE</td>
<td>1 AMB W UNSTEADY GAIT AND NO ASSISTANCE</td>
<td>0 UNABLE TO AMBULATE OR TRANSFER</td>
<td>MENTATION **</td>
<td>0 ALERT, ORIENTED X 2</td>
</tr>
<tr>
<td>1</td>
<td>PERIODIC CONFUSION OR DISORIENTATION X 1 OR 2</td>
<td>1 CONFUSION AT ALL TIMES</td>
<td>0 COMATOSE/UNRESPONSIVE</td>
<td>1 INCONTINENT</td>
<td>PRIOR FALL HISTORY</td>
<td>0 YES – BEFORE ADMISSION</td>
</tr>
<tr>
<td>2</td>
<td>1 INDEPENDENT, BUT W FREQUENCY OR DIARRHEA</td>
<td>1 NEEDS ASSISTANCE W TOILETING</td>
<td>1 UNKNOW</td>
<td>1 ANTI-CONVULSANTS, SEDATIVES, PSYCHOTROPICS, HYPNOTICS, NEW ANTIHYPERTENSIVES, OPIOIDS, DIURETICS AND/OR LAXATIVES</td>
<td>TOTAL SCORE</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Consider History of Dementia or Delirium or Current Delirium as a risk factor equivalent to Periodic Confusion, Disorientation or Confusion at all times when assessing Mentation.

**SCORE OF 3 OR ABOVE: PATIENT AT RISK FOR FALLS**

**SCORE OF ≥ 3: Patient at risk for Falls**
Appendix J

Microsystem Mobility Protocol
Appendix K

Fall prevention cheat sheet

### Assessment - Schmid Fall Risk Scale:
- Score ≤ 2 = low risk
- Score = 3 = fall risk
- Score ≥ 4 = high fall risk

### Stratification - Identify High Fall Risk:
- **Mobility** – Ambulates or transfers with assistive device or assistance; Ambulates with unsteady gait and no assistance
- **Mentation** – Periodic confusion, Confused at all times
- **Elimination** – Needs assistance with toileting, independent with frequency or diaphoresis, Incontinence
- **Prior History of Falls** – Before admission (home or previous recent hospitalization, During this admission
- **Current Medications** – Patient is taking medications that might cause confusion, sedation, orthostasis, gait abnormalities, urinary or fecal urgency or frequency

### Interventions - Fall Precautions:

<table>
<thead>
<tr>
<th>Schmid Score ≤ 2</th>
<th>Schmid Score = 3</th>
<th>Schmid Score ≥ 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-skid socks</td>
<td>Arms reach supervised toileting/ambulating</td>
<td>Assess need to implement fall Prevention/Safety Plan</td>
</tr>
<tr>
<td>Hourly rounding</td>
<td>Bed alert ZONE 2 (in addition to standard precautions)</td>
<td>(in addition to Fall Risk Precautions)</td>
</tr>
<tr>
<td>Fall Risk signage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Risk arm band</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Inpatient Fall Trends:
- 21 Total Falls
- Approximately 50% result in patient harm

- **Largest bucket of Fall Types:**
  - #1 Ambulating/Standing
  - #2 Unknown Activity/Found on Floor
  - #3 Assisted to Floor

- **Contributing Factors:**
  - Bed/Chair Alarms NOT activated
  - No arms reach supervision

- Recommendations...
Appendix L

Plan-Do-Study-Act (PDSA) cycle.

<table>
<thead>
<tr>
<th>Model for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are we trying to accomplish?</td>
</tr>
<tr>
<td>How will we know that a change is an improvement?</td>
</tr>
<tr>
<td>What change can we make that will result in improvement?</td>
</tr>
</tbody>
</table>

![PDSA Cycle Diagram]

Appendix M
CNL Project: Statement of Non-Research Determination Form

Student Name: Norberto Benitez

Title of Project:
Reduce Extended Length of Stay by Reducing In-Hospital Falls.

Brief Description of Project:
We are seeking to reduce the in-hospital falls (IHFs) rates by 25%. While maintaining a minimal investment in staff training/education, replacing/repairing current fall prevention devices, usage of Fall Prevention Tool Kits, and proper usage of Fall Risk Assessment Tool (FRAT). This can be accomplished by using EBP strategies with current traditional methods thus augmenting our fall prevention strategies.

A) Aim Statement:
The outcomes we are expecting to achieve in our Med/Surg/Tele unit are a reduction in falls by 25%. Thereby reducing ELOS and associated costs.

B) Description of Intervention:
This would consist of resetting expectations by retraining nursing staff with the use of current FPTK equipment, and the use of a FRAT, specifically the Schmidt fall screen tool. The training will also consist of setting room layout, performing safety checks, and having staff perform patient and family education on fall prevention strategies.

C) How will this intervention change practice?
The goal of the is this project is to reduce ELOS by reducing falls. The interventions are two-fold: 1.) resetting expectations by retraining staff on safety checks, current fall prevention strategies (FRATS) and fall prevention equipment (FPTKs), 2.) by including patients and family in fall prevention interventions by educating them on safety strategies. These interventions will serve as a reminder that patient safety is of utmost importance. Being empathetic to patient and family needs while educating them will not only improve safety but also build trust and improves patient outcomes.
D) Outcome measurements:

We aimed to reduce IHF by 20% from 21 (1.75/month) to 16.8 (1.44/month) occurrences yearly. If we achieve our target goal, we still have significant work to do, the national average of 4 (0.33/month) occurrences per year. Nevertheless, implementing the QIP will lead the unit in the right direction. To ensure improvement, we can perform chart audits to determine if fall prevention strategies are being implemented. For example, review Schmidt scores and updates, fall prevention strategies, and active hourly rounding documentation (use of FPTK). When fall rates reach less than 1.4/month (during the Master's program period: Jan-May), we can infer that our new strategies are working to reduce falls and will meet our 20% reduction from 21 occurrences in 2022 to 16.8 falls in 2023.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.hhs.gov/chrp/categories/1569)

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

<table>
<thead>
<tr>
<th>Project Title:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is a part of usual care. ALL participants will receive standard of care.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project is NOT designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does NOT follow a protocol that overrides clinical decision-making.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does NOT develop paradigms or untested methods or new untested standards.

| The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does NOT seek to test an intervention that is beyond current science and experience. | X |
| The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP. | X |
| The project has NO funding from federal agencies or research-focused organizations and is not receiving funding for implementation research. | X |
| The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients. | X |

If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: "This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."

**ANSWER KEY:** If the answer to ALL of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is NO, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Holmman, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.*

**STUDENT NAME (Please print):** Norberto Benitez

**Signature of Student:** ___________________________ **DATE** 4/10/2023

**SUPERVISING FACULTY MEMBER NAME (Please print):**

**Signature of Supervising Faculty Member:** ___________________________ **DATE** __________